

CLAIMS

1. A method of selecting an active base station for use during soft handover, the active base station
5 being for receiving data from a source user equipment for onward transmission to a destination user equipment, the method comprising:
determining a measure of a quality of service from
the base station to the destination user equipment; and
10 selecting the base station as an active base station based on the measure of the quality of service.
2. A method according to claim 1, further comprising the steps of determining a credit value
15 based on the measure of the quality of service, and transmitting the credit value from the base station to the source user equipment.
3. A method according to claim 2, wherein the
20 source user equipment receives the credit value from the base station and selects a base station as an active base station based on the credit value.
4. A method according to claim 3, wherein a
25 credit value is determined for each of a plurality of source user equipments.
5. A method according to any of the preceding claims, wherein a plurality of different measures of
30 the quality of service from the base station to a destination user equipment are determined.
6. A method according to any of the preceding claims, wherein at least one of the following measures
35 of quality of service is determined:
(a) throughput ratio

- (b) ratio of satisfied packets
- (c) base station buffer occupancy.

7. A method according to any of the preceding
5 claims, wherein a credit value is determined for each
of a plurality of source user equipments by comparing
measures of a quality of service from the base station
to a plurality of destination user equipments.

10 8. A method according to claim 7, wherein the
credit value is based on at least one of the following
relative measures:

- (a) distance from average throughput
- (b) distance from minimum throughput ratio
- 15 (c) distance from minimum quality of service
- (d) distance from minimum buffer length

9. A method according to claim 7 or 8, wherein
the credit value is based on a plurality of relative
20 measures, and is a single value obtained by combining
the relative measures.

10. A method according to any of the preceding
claims wherein a source user equipment receives credit
25 values from the base station, and selects a base
station as an active base station based on a history of
the credit values.

11. A method according to claim 10, wherein a
30 source user equipment with an improving history of
credit values from a base station selects that base
station as an active base station.

12. A method according to claim 11, wherein a
35 source user equipment with a worsening history of

credit values from a base station deselects that base station as an active base station.

13. A method according to any of the preceding
5 claims, wherein a base station is selected as an active base station based additionally on a measure of radio channel conditions from a source user equipment to the base station.

10 14. A method according to claim 13, wherein a base station is selected as an active base station based on a history of radio channel conditions.

15 15. A method according to any of the preceding claims, where the selection step is carried out by a user equipment and the method further comprising a step of transmitting an indication of a selected base station from the user equipment to the base station.

20 16. A method according to any of the preceding claims, further comprising the step of scheduling uplink transmissions in dependence on the measure of a quality of service.

25 17. A method according to claim 16, wherein a source user equipment receives a credit value based on the measure of a quality of service and determines a time and/or rate of packet transmission based on the credit value.

30 18. A method according to any of the preceding claims, the method being repeated periodically.

35 19. A method according to any of the preceding claims, wherein the base station transmits data to a destination user equipment in its downlink.

20. A method according to any of the preceding claims, wherein the base station transmits data to a destination user equipment via a network.

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21. A base station for receiving data packets in an uplink from a source user equipment for onward transmission to a destination user equipment, the base station comprising:

10 means for determining a measure of a quality of service from the base station to the destination user equipment;

means for producing a credit value based on the measure of the quality of service;

15 means for transmitting the credit value to the source user equipment;

means for receiving from the source user equipment an indication of whether the base station has been selected as an active base station; and

20 means for allocating a channel to the source user equipment if the base station has been selected as an active base station.

22. A base station according to claim 21, wherein
25 a credit value is determined for each of a plurality of source user equipments.

23. A base station according to claim 21 or 22, wherein the credit value is based on a plurality of
30 different measures of the quality of service from the base station to a destination user equipment.

24. A base station according to any of claims 21 to 23, wherein a credit value is determined for each of
35 a plurality of source user equipments by comparing

measures of a quality of service from the base station to a plurality of destination user equipments.

25. A base station according to any of claims 21
5 to 24, wherein the credit value is based on a plurality of relative measures, and is a single value obtained by combining the relative measures.

26. A user equipment for transmitting data to a
10 destination user equipment via one or more base stations using soft handover, the user equipment comprising:

means for receiving a credit value from a base station, the credit value being based on a measure of a
15 quality of service from the base station to the destination user equipment; and

means for selecting a base station as an active base station based on the credit value.

20 27. A user equipment according to claim 26, further comprising means for storing a history of credit values, and wherein the selecting means is arranged to select a base station as an active base station based on the history of credit values.

25 28. A user equipment according to claim 26 or 27, further comprising means for determining a measure of radio channel conditions from the user equipment to the base station, and wherein the selecting means is
30 arranged to select a base station as an active base station based additionally on the measure of radio channel conditions.

29. A user equipment according to claim 29,
35 further comprising means for storing a history of radio channel conditions, and wherein the selecting means is

arranged to select a base station as an active base station based on the history of radio channel conditions.

5 30. A user equipment according to any of claims 26 to 29, further comprising means for transmitting an indication of a selected base station.

10 31. A user equipment according to any of claims 26 to 30, further comprising means for scheduling uplink transmissions in dependence on the credit value.

15 32. A communications system comprising a base station according to any of claims 21 to 25 and a user equipment according to any of claims 26 to 31.